

## CLAIMS

1. A formulation for use in the treatment of corrosion and metal sulphide scale deposits in aqueous systems, said formulation comprising a THP<sup>+</sup> salt (as hereinbefore defined) and a primary, secondary or tertiary alcohol having an acetylenic bond in the carbon backbone.

2. A formulation as claimed in Claim 1, in which the acetylenic bond is adjacent to the hydroxyl group, said alcohol having the general formula (I):



wherein:

R<sup>1</sup>, R<sup>2</sup> and R<sup>3</sup> (which may be the same or different) each independently represent hydrogen, C<sub>1</sub> to C<sub>8</sub> alkyl or functionally-substituted alkyl.

3. A formulation as claimed in Claim 1 or 2, in which the alcohol is propargyl alcohol.

4. A formulation as claimed in any one of Claims 1 to 3 in which the metal sulphide scale is iron sulphide.

5. A formulation as claimed in any one of Claims 1 to 3 in which the metal sulphide scale is lead sulphide.

6. A formulation as claimed in any one of Claims 1 to 3 in which the metal sulphide scale is zinc sulphide.

7. A formulation as claimed in any one of the preceding claims in which the THP<sup>+</sup> salt comprises an anion selected from the group

consisting of sulphate, chloride, phosphate, bromide, fluoride, carbonate, citrate, lactate, tartrate, borate, silicate, formate and acetate.

8. A formulation as claimed in any one of the preceding claims, said formulation further including a surfactant.

9. A formulation as claimed in Claim 8 in which the surfactant is a cationic surfactant.

10. A formulation as claimed in Claim 9 in which the cationic surfactant is selected from the group consisting of quaternary ammonium compounds, N-alkylated heterocyclic compounds, quaternised amido-amines, and amino methane phosphonates.

11. A formulation as claimed in Claim 8 in which the surfactant is selected from the group consisting of anionic, amphoteric and non-ionic surfactants.

12. The use of a formulation as claimed in any one of the preceding claims for treating corrosion of mild steel, copper or aluminium.

13. A method for treatment of an aqueous system containing or in contact with a metal sulphide scale while concomitantly inhibiting the corrosion of surfaces in contact with said aqueous system, which method comprises the addition to said aqueous system of a scale and corrosion inhibiting amount of a formulation in accordance with any one of Claims 1 to 11.

14. A method according to Claim 13 in which the aqueous system is used in enhanced oil recovery.

15. A method as claimed in Claim 13 in which the aqueous system is used in industrial water systems.

16. A method as claimed in Claim 13 in which the aqueous system is used in paper manufacturing systems.

17. A formulation consisting essentially of the reaction product of a THP<sup>+</sup> salt (as hereinbefore defined) and an acetylenic alcohol as claimed in any one of Claims 1 to 3, wherein the ratio of said THP<sup>+</sup> salt and said acetylenic alcohol is between 1:1 and 750:1.

18. A method as claimed in any one of Claims 13 to 16 in which the THP<sup>+</sup> salt is added to the aqueous system in an effective amount of up to 30% by weight.

19. A formulation as claimed in any one of Claims 1 to 11 in which the ratio of the THP<sup>+</sup> salt to the acetylenic alcohol is between 1:1 and 750:1.

20. A formulation as claimed in Claim 19 in which the ratio is between 15:1 and 300:1.

21. A formulation as claimed in Claim 19 or 20 in which the ratio is about 40:1.

22. A formulation substantially as described herein with reference to the accompanying example.

23. A method substantially as described herein with reference to the accompanying example.